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L11: Entry 5 of 12

File: USPT

Dec 17, 1996

DOCUMENT-IDENTIFIER: US 5585056 A

TITLE: Plasticizers for fibers used to form surgical devices

BSPR:

Absorbable surgical devices have been made from fibers of synthetic polymers such as polymer made from glycolide, lactide or p-dioxanone. With respect to polyglycolic acid sutures, U.S. Pat. No. 3,297,033 states at column 3, line 45 that: "In general, plasticizers tend to interfere with crystallinity, orientation, etc., and weaken fibers, but are useful for sponges and films." U.S. Pat. No. 3,792,010 describes plasticized polyester sutures prepared by reacting glycolide and lactide in the presence of a plasticizer such as bis-2-methoxyethyl phthalate or acetoxymethyl triethyl citrate. U.S. Pat. No. 3,636,956 states at column 7, line 9 that any of a variety of plasticizers such as glyceryl triacetate, ethyl benzoate and diethyl phthalate can be used with polylactide and that preferred plasticizers for glycolide/lactide copolymers are dibutylphthalate and bis-2-methoxyethyl phthalate. U.S. Pat. No. 4,915,893 describes spinning polyesters such as polylactide with an additive such as a polyurethane, glycolide, lactide, camphor, benzoic acid-2-hydroxyacetate, hexamethylbenzene, 1,2-cyclohexandione and other low molecular weight organic compounds which are preferably soluble in trichloromethane and/or dichloromethane and ethanol and having a melting temperature in the range of 40.degree. to 180.degree. C.

DEPR:

Fibers in accordance with the present invention are prepared by spinning or extruding a composition containing a bioabsorbable polymer and plasticizer.

DEPR:

The bioabsorbable polymer can be prepared from any of the monomers known to form biocompatible, bioabsorbable polymers, such as, for example, glycolide, glycolic acid, lactide, lactic acid, p-dioxanone, epsilon-caprolactone, alkylene carbonates and alkylene oxides. Polymers derived from glycolide, lactide, p-dioxanone or combinations thereof are preferred.

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Terms	Documents
L51 and (pharmaceuticals or drugs)	74

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Database: IBM Technical Disclosure Bulletins

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6130200.pn. and mixtures

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DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=OR

L52	L51 and (pharmaceuticals or drugs)	74	L52
L51	L50 and (two adj2 more adj1 polymers)	601	L51
L50	l47 and (polyesters or polylactides or polycaprolactones or polyglycosides or polyanhydrides or polyamides)	17100	L50
L49	L48 and (drugs or pharmaceutical)	24	L49
L48	L47 and ((amorphous adj1 polymer) same (crystall\$ adj1 polymer))	225	L48
L47	polymer near (mixtures or combinations)	38207	L47
L46	l42 and (drug or pharmaceutical)	41	L46
L45	l42 and (drug or pharmaceutical)	23	L45
L44	l42 and (active or pharmaceutical)	120	L44
L43	l42 (active or pharmaceutical)	1247071	L43
L42	((amorphous adj1 polymer) same (crystall\$ adj1 polymer)) and l41	355	L42
L41	(polymer near (blends or mixtures or combinations))	55247	L41

<u>L40</u>	l1 and l28	11	<u>L40</u>
<u>L39</u>	\L38	260	<u>L39</u>
<u>L38</u>	L28 and (polycaprolactone or (polyamino near acids) or polylactic or PCL or PLA or PLGLY)	73	<u>L38</u>
<i>DB=USPT; PLUR=YES; OP=OR</i>			
<u>L37</u>	5620700.pn.	1	<u>L37</u>
<u>L36</u>	5620700.pn.	1	<u>L36</u>
<u>L35</u>	5744153.pn.	1	<u>L35</u>
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=OR</i>			
<u>L34</u>	((ethyl adj1 benzoate) near solvents) and (polyglycolides or polylactides or polyester or polyanhydrides polycaprolactones)	7	<u>L34</u>
<u>L33</u>	(ethyl adj1 benzoate) same (polyglycolides or polylactides or polyester or polyanhydrides polycaprolactones)	52	<u>L33</u>
<u>L32</u>	L30 and (drug or pharmaceutical)	26	<u>L32</u>
<u>L31</u>	L30 and (drug or phramaceutical)	18	<u>L31</u>
<u>L30</u>	L28 and (polycaprolactone or polylactide or polyvinylpyrrolidone)	99	<u>L30</u>
<u>L29</u>	L28 and ((polylactide same polyglycolic or polyanhydrides) same (PVP or PGLA or polyvinylpyrrolidone))	0	<u>L29</u>
<u>L28</u>	(polymer near blend near compositions)	997	<u>L28</u>
<u>L27</u>	L21 and L1	3	<u>L27</u>
<i>DB=USPT; PLUR=YES; OP=OR</i>			
<u>L26</u>	5487897.pn.	1	<u>L26</u>
<u>L25</u>	5632727.pn.	1	<u>L25</u>
<u>L24</u>	5660849.pn.	1	<u>L24</u>
<u>L23</u>	4976962.pn.	1	<u>L23</u>
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=OR</i>			
<u>L22</u>	6193991.pn.	2	<u>L22</u>
<u>L21</u>	L18 and (polymer near (blends or mixtures or combinations))	40	<u>L21</u>
<u>L20</u>	L19 L18 and (polymer near (blends or mixtures or combinations))	41	<u>L20</u>
<u>L19</u>	L18 and (ethyl near benzoate)	1	<u>L19</u>
<u>L18</u>	L17 and (solvent)	122	<u>L18</u>
<u>L17</u>	L16 and composition	164	<u>L17</u>
<u>L16</u>	L14 same (pharmaceutical or drugs or active)	189	<u>L16</u>
<u>L15</u>	L14 and (pharmaceutical or drugs or active)	1077	<u>L15</u>
<u>L14</u>	(polycaprolactone or polyester) same (polylactide)	1323	<u>L14</u>
<u>L13</u>	L12 and (drug or pharmaceutical)	43	<u>L13</u>
<u>L12</u>	L7 and (polymer near blends)	169	<u>L12</u>
<u>L11</u>	L10 and (drug or pharmaceutical)	26	<u>L11</u>
<u>L10</u>	L9 and amorphous	44	<u>L10</u>
<u>L9</u>	L7 and (crystall\$ near polymer)	54	<u>L9</u>
<u>L8</u>	L7 and (crystall\$)	519	<u>L8</u>

<u>L7</u>	(polyvinylpyrrolidone or PVP) same (polylactide or polycaprolactone or polyester or (poly near glycolic near acid))	1967	<u>L7</u>
<u>L6</u>	L4 and (inject\$ or injectable)	75	<u>L6</u>
<u>L5</u>	L4 and (polyesteer or (poly adj1 caprolactone))	10	<u>L5</u>
<u>L4</u>	L3 and (layered or layers)	129	<u>L4</u>
<u>L3</u>	L2 and solvent	211	<u>L3</u>
<u>L2</u>	L1 and (active or pharmaceutical or drug)	269	<u>L2</u>
<u>L1</u>	(amorphous adj1 polymer) same (crystal\$ adj1 polymer)	1026	<u>L1</u>

END OF SEARCH HISTORY

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L11: Entry 2 of 2

File: USPT

Sep 2, 2003

DOCUMENT-IDENTIFIER: US 6613363 B1

TITLE: Biodegradable chewing gum bases including plasticized poly(D,L-lactic acid) and copolymers thereof

Detailed Description Text (7):

Consequently, the poly(lactic acid) polymer has two corresponding enantiomeric forms also: PDLA; and PLLA. The racemic mixture of the two is poly(D,L-lactic acid). Both PDLA and PLLA are highly crystalline. The copolymers poly(D,L-lactic acid) are much less crystalline or even amorphous depending on the monomer ratio. Literature has shown that PLLA has 38% crystallinity, while poly(D,L-lactic acid) with 5 mole percent D-lactic acid has only 18% crystallinity. At about a 1:1 ratio, poly(D,L-lactic acid) is amorphous.

WO 00/19837

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L2: Entry 33 of 42

File: USPT

Mar 29, 1983

DOCUMENT-IDENTIFIER: US 4378228 A

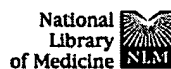
TITLE: Process for preparation of monodispersed crystalline particles from amorphous polymers

Abstract Text (1):

Process for preparation of monodispersed crystalline particles from amorphous crystallizable polymers. In this process, an amorphous polymer of an inorganic glass, such as selenium, or of organic polymer, such as a polyester, is initially contacted with a crystal inducing fluid under certain specified conditions. Concurrent with such contact the crystallizable polymer is subjected to physical and/or ultrasonic forces. This combination of steps results in the substantially complete conversion of the amorphous polymer to monodispersed crystalline particles. In the case of crystallization of amorphous selenium, this process is directive for preparation of the corresponding triclinic crystalline form of this material.

Brief Summary Text (16):

The above and related objects are achieved by providing a process wherein a sample comprising an amorphous crystallizable polymer is contacted with a crystal inducing fluid, thereby causing the formation of crystalline particles on the surface of the polymer exposed to said solvent. Concurrent with or subsequent to the formation of the crystalline particles, said particles are subjected to mechanical and/or ultrasonic forces thereby resulting in (a) their removal from the surface of the amorphous polymer; (b) their fragmentation to monodispersed particles, and; (c) the re-exposure of the amorphous polymer sample to the crystal inducing fluid. The rate of attrition of the crystals from the amorphous polymer must be approximately comparable to or greater than the rate of crystalline particle formation on said surface. This process can proceed until substantially all of the amorphous polymer has been crystallized.



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☐ 1: [Hutmacher DW, Goh JC, Teoh SH.](#)

[Related Articles, Links](#)



An introduction to biodegradable materials for tissue engineering applications.
Ann Acad Med Singapore. 2001 Mar;30(2):183-91. Review.
PMID: 11379417 [PubMed - indexed for MEDLINE]

☐ 2: [DesNoyer JR, McHugh AJ.](#)

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Role of crystallization in the phase inversion dynamics and protein release kinetics of injectable drug delivery systems.
J Control Release. 2001 Feb 23;70(3):285-94.
PMID: 11182199 [PubMed - indexed for MEDLINE]

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L5: Entry 40 of 54

File: USPT

Dec 26, 2000

DOCUMENT-IDENTIFIER: US 6165486 A

TITLE: Biocompatible compositions and methods of using same

Detailed Description Text (31):

In vivo of the present invention confirms the applicability of the present invention as a tissue substitute, the contemplated use of the present invention. Scaffolds constructed of the composition of the present invention support the growth of bone both in vivo and in vitro. The in vivo data supports the use of a blend of the present invention comprising poly(lactic-co-glycolic) acid, polycaprolactone and particulate hydroxyapatite. The degradation time of PCL is typically slower than that of poly(lactic-co-glycolic) acid. The blends of the two polymers have advantageous controlled properties, such as mechanical strength and degradation time. Polycaprolactone is utilized because it is crystalline and demonstrates high solubility, blend miscibility (when in small concentrations), nontoxicity, and biodegradability. PLGA is chosen for its amorphous nature, biodegradability, and nontoxicity.

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L8: Entry 15 of 83

File: PGPB

Dec 5, 2002

DOCUMENT-IDENTIFIER: US 20020182241 A1

TITLE: Tissue engineering of three-dimensional vascularized using microfabricated polymer assembly technology

Detail Description Paragraph (27):

[0061] Particularly useful for this invention are polyesters in the polylactide(PLA)/polyglycolide(PLG) family. These polymers have received a great deal of attention in the drug delivery and tissue regeneration areas. They have been in use for over 20 years in surgical sutures, are Food and Drug Administration (FDA)-approved and have a long and favorable clinical record. A wide range of physical properties and degradation times can be achieved by varying the monomer ratios in lactide/glycolide copolymers. Poly-L-lactic acid (PLLA) and poly-glycolic acid (PGA) exhibit a high degree of crystallinity and degrade relatively slowly, while copolymers of PLLA and PGA, PLGAs, are amorphous and rapidly degraded.